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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,760	03/22/2004	Paul Anthony Bristow	149101-1	1252
23413	7590	06/22/2007	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			HUSON, MONICA ANNE	
			ART UNIT	PAPER NUMBER
			1732	
			MAIL DATE	DELIVERY MODE
			06/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/805,760

Applicant(s)

BRISTOW ET AL.

Examiner

Monica A. Huson

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-16 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-16 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>043007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to the RCE filed 30 April 2007.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-11, 13, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Match (U.S. Patent 6,224,706), in view of Masui et al. (U.S. Patent 5,968,629).

Regarding Claim 3, Match shows that it is known to carry out a method of forming a layered article (Abstract), the method comprising thermoforming a substrate sheet to form a shaped substrate (Figure 4, element 31; Column 15-30), wherein the substrate is an air-permeable material to allow a vacuum to be applied through the shaped substrate (Column 3, lines 31-36); pulling a vacuum through the shaped substrate (Column 4, lines 31-36); and pulling a film layer onto a surface of the shaped substrate to form the layered article (Column 4, lines 31-40). Although Match shows using an air-permeable substrate, he does not specifically show using a fiber-reinforced plastic material of a specific void content. Masui et al., hereafter "Masui," show that it is known to carry out a method of forming a layered article, wherein the substrate is a fiber-reinforced plastic material having a void content of 50 vol% (Column 2, lines 33-36). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Masui's fiber-reinforced plastic material as the substrate in Match's molding process in

order to enhance the acoustic absorbing component of the final article (see Masui, Column 1, lines 65-67).

Regarding Claim 2, Matich shows the process as claimed as discussed in the rejection of Claim 3 above, including a method wherein the film layer further comprises a compatible layer (Column 4, lines 39-40; It is being interpreted that the layer of paint or print is compatible with the substrate 31), meeting applicant's claim.

Regarding Claims 4 and 5, Matich shows the process as claimed as discussed in the rejection of Claim 3 above, but he does not show a specific void content for the substrate. Masui shows that it is known to carry out a method wherein the void content is 50vol% (Column 2, lines 33-35). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Masui's fiber-reinforced plastic material with a void content of 50vol% as the substrate in Matich's molding process in order to enhance the acoustic absorbing component of the final article (see Masui, Column 1, lines 65-67).

Regarding Claim 6, Matich shows the process as claimed as discussed in the rejection of Claim 3 above, but he does not specific the dimension of a fiber filler in the substrate material. Masui shows that it is known to carry out a method wherein filler fibers having a fiber diameter of about 6um to about 25um (Column 6, lines 39-40), and a fiber length of about 2mm to about 75mm (Column 6, lines 40-41). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Masui's fiber dimensions in the substrate during Matich's molding process in order to permit the desired percentage of voids in the substrate (see Masui, Column 6, lines 46-47).

Regarding Claim 7, Matich shows the process as claimed as discussed in the rejection of Claim 3 above, but he does not show using a foraminated substrate. Masui shows that it is known to carry out a method wherein the

shaped substrate is foraminated (Column 5, lines 21-22; it is being interpreted that “expanded” implies a foamed structure, which is functionally equivalent to a foraminated structure.). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Masui’s foraminated substrate as that during Matich’s molding process in order to enhance the acoustic absorbability of the final product.

Regarding Claim 8, Matich shows that it is known to carry out a method of forming a layered article (Abstract), the method comprising thermoforming a substrate sheet to form a shaped substrate (Figure 4, element 31; Column 15-30), wherein the substrate is an air-permeable material to allow a vacuum to be applied through the shaped substrate (Column 3, lines 31-36); pulling a vacuum through the shaped substrate (Column 4, lines 31-36); and pulling a film layer onto a surface of the shaped substrate to form the layered article (Column 4, lines 31-40). Although Matich shows using an air-permeable substrate, he does not specifically show using an open-celled fiber-reinforced plastic material. Masui shows that it is known to carry out a method of forming a layered article, wherein the substrate is an open-celled fiber-reinforced plastic material (Column 5, lines 21-23; it is being interpreted that “expanded” implies an open-celled structure). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Masui’s open-celled fiber-reinforced plastic material as the substrate in Matich’s molding process in order to enhance the acoustic absorbing component of the final article (see Masui, Column 1, lines 65-67).

Regarding Claims 9 and 10, Matich shows the process as claimed as discussed in the rejection of Claim 8 above, but he does not show a specific percentage of fibers and resin in his substrate. Masui shows that it is known to carry out a method wherein the substrate sheet comprises 50wt% plastic material and 50wt% of fibers (Column 6, lines 19-20). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention

was made to use Masui's specific composition of the substrate as that in Matich's molding process in order to enhance the acoustic absorbability of the final product.

Regarding Claim 11, Matich shows the process as claimed as discussed in the rejection of Claim 9 above, but he does not show using a particular plastic in his substrate. Masui shows that it is known to carry out a method wherein the plastic material of the substrate is polyamide (Column 5, line 60). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Masui's specific polymer substrate as that during Matich's molding process in order to enhance the acoustic absorbability of the final product.

Regarding Claim 13, Matich shows the process as claimed as discussed in the rejection of Claim 3 above, including a method further comprising disposing a tie-layer between the shaped substrate and the film layer (Figure 4, element 34), meeting applicant's claim.

Regarding Claim 14, Matich shows the process as claimed as discussed in the rejection of Claim 3 above, including a method wherein thermoforming the substrate sheet further comprises heating a substrate sheet to a temperature (Column 4, lines 27-30; It is noted heating the sheet is the positively-claimed method step, while "[allowing] lofting of fibers" is only an intended use of the heating step, and therefore, not a positively-recited method step.), meeting applicant's claim.

Regarding Claim 16, Matich shows the process as claimed as discussed in the rejection of Claim 3 above, but he does not show using non-woven scrim as part of his substrate. Masui shows that it is known to carry out a method wherein the substrate sheet further comprises a non-woven scrim disposed on the surface of the substrate sheet (Column 6, lines 31-32). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention

was made to use Masui's non-woven sheet on the substrate during Matich's molding process in order to improve the reinforcement of the substrate.

Claims 12, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matich and Masui, further in view of Holtrop et al. (U.S. Patent 4,529,641).

Regarding Claim 12, Matich shows the process as claimed as discussed in the rejection of Claim 3 above, but he does not specifically show using plug-assist vacuum molding. Holtrop shows a method wherein the substrate sheet is thermoformed with a membrane assisted vacuum pressure forming method with plug assist (Column 5, lines 3-5). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Holtrop's plug assist vacuum molding as that of Matich's vacuum molding process in order to facilitate the most efficient vacuum molding available.

Regarding Claim 18, Matic shows that it is known to carry out a method of forming a layered article (Abstract), the method comprising heating a substrate sheet to a temperature (Column 4, lines 27-30; It is noted heating the sheet is the positively-claimed method step, while "[allowing] lofting of fibers" is only an intended use of the heating step, and therefore, not a positively-recited method step.), disposing the substrate sheet against a membrane-assisted pressure box (Column 4, lines 15-18); pushing the substrate sheet onto a mold to form a shaped substrate (Column 4, lines 31-37); heating a film layer (Column 4, lines 27-28); pulling a vacuum through the shaped substrate (Column 4, lines 31-37); and pulling the film layer against the shaped substrate to form the layered article (Column 4, lines 21-36). Although Matich shows using an air-permeable substrate, he does not specifically show using a fiber-reinforced plastic material of a specific void content. Masui shows that it is known to carry out a method of forming a layered article, wherein the substrate is a fiber-reinforced plastic material

having a void content of 50 vol% (Column 2, lines 33-36). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Masui's fiber-reinforced plastic material as the substrate in Matich's molding process in order to enhance the acoustic absorbing component of the final article (see Masui, Column 1, lines 65-67).

Regarding Claim 19, Matich shows the process as claimed as discussed in the rejection of Claim 18 above, but he does not show a specific void content for the substrate. Masui shows that it is known to carry out a method wherein the void content is 50vol% (Column 2, lines 33-35). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Masui's fiber-reinforced plastic material with a void content of 50vol% as the substrate in Matich's molding process in order to enhance the acoustic absorbing component of the final article (see Masui, Column 1, lines 65-67).

Regarding Claim 20, Matich shows the process as claimed as discussed in the rejection of Claim 3 above, including a method further comprising disposing a tie-layer between the shaped substrate and the film layer (Figure 4, element 34), meeting applicant's claim.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matich, Masui, and Holtrop, further in view of Nagayama et al. (U.S. Patent 5,854,149). Matich shows the process as claimed as discussed in the rejection of Claim 14 above, but he does not show heating to a temperature about 232C to about 371C. Nagayama shows that it is known to carry out a method wherein the heating temperature is 250C (Column 28, lines 57-66). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Nagayama's processing temperature during Matich's thermoforming process in order to properly process and form the specific molding material without overheating or underheating.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A. Huson whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Monica A Huson

June 16, 2007